

REMARKS

Reconsideration and allowance are respectfully requested.

Newly added claims 15-32 merely define the subject matter defined in cancelled claims 1-14 and address all the issues on pages 3-4 of the office action.

Claims 15-32 particularly point out the subject matter of the invention. Antecedence for the amendments can be found in the original specification, claims, and the original drawings.

The salient "25" of claim 23 (former claim 7) is shown in Figure 3.

No new matter has been added by the above amendments or by the present response.

Claims 15-32 are patentable under 35 U.S.C. 102(b) over de Launay (US Patent 4,176,680).

The present invention, as defined in claim 15, is a unique pressure limiting valve device for protecting hydraulic pressure packs against an overload and hydraulic props against falling rocks in underground mining and tunnel construction. The valve device comprises a valve housing, a consumer connection coupled to the valve housing, a pressurized fluid outlet in the consumer connection for allowing flow of pressurized fluid, and a flow gap between the pressurized fluid outlet and the consumer connection. A movable closure couples the valve housing and the consumer connection and a valve spring in the valve housing for exerts force such that the movable closure is movable against the force exerted. An inventive seal on the movable closure secures the flow gap with the valve housing and the consumer connection remaining connected when the overload occurs for discharging the pressurized fluid. The seal comprises a groove and a seal ring with limited flexibility disposed in the groove without pre-stressing. The seal ring has a side facing the connection, a second side opposite the first side, top side and bottom opposite sides between the first side and the second side. The groove has a

unique shape for allowing partial or total flow of the pressurized fluid into the groove and around the seal ring, such that the seal ring is displaceable towards the connection due to flow of the pressurized fluid on sides of the seal ring including the second side away from the first side.

Dependent claims add further patentable features to claim 15.

Nothing in the references of record describes, teaches or suggests those claimed features.

De Launay relates to a check valve in a fluid flow line in which during the opening pressure the fluid passes by the sealing ring (resulting in a leaking valve) and that the fluid cannot enter the groove and flow around the sealing ring to displace the ring against the closure. The pressure of the spring presses the sealing ring onto the sealing surface and there is no displacement of the ring by the flow. Moreover, de Launay has nothing to do with a pressure limiting valve. Lacking most of the claimed features of claim 15, de Launay cannot anticipate or render obvious claim 15. Since claim 15 is patentable claims 16-32 dependent thereon are also patentable over de Launay.

Claims 15-32 are patentable under 35 U.S.C. 103(a) over each of de Launay and Schultz (US Patent 3,344,806) in view of Dams (EP 0096303) and further in view of Hulsey (US Patent 3,497,177), Weirich (US Patent 4, 313,463), and Overbeke (US Patent 2,655,173).

As pointed out above de Launay does not teach or suggest the claimed invention. Therefore, any further combination of de Launay will also lead away from the present claims. Additionally, for the reasons submitted below, the combination of de Launay with Hulsey, Weirich and Overbeke do not and cannot render obvious any of claims 15-32.

Schultz relates to a check valve which, as acknowledged by the Examiner, has nothing to do with a groove and seal ring. In fact, the Schulz device does not require such a seal ring and

does not commend to a modification with Dams because Schulz cannot accommodate the claimed groove and ring.

The Examiner relies on Dams to fill the gap in Schulz. However, there is no motivation, suggestion or any hint within the two references providing a basis for the modification proposed by the Examiner, which stems from hindsight reconstruction.

Moreover, the Examiner's rejections are completely silent on the seal ring being disposed in the groove without being pre-stressed. Dams teaches away from the claimed invention by expressly teaching that the O-ring is "pre-tensioned" (see, for example, claim 2). Dams provides that the ring is ductile so that it can position itself into the gap 28 (see, for example, page 13 line 20 onwards). Dams teaches away from any material entering the gap 28 and flowing behind the ring.

Thus, Schultz and Dams do not teach a combination and even if combined they teach away from the claimed invention described in claims 15-32. Therefore, any further combination with tertiary references will also lead away from claims 15-32. Additional reasons follow as to why the combined teachings will not and cannot render obvious the claimed invention as claimed in claims 15-32.

Hulsey does not relate to pressure limiting valves. Hulsey does not teach or suggest any sealing ring behind which pressure fluid can flow.

Weirich relates to a device in which the O-ring 28 is pressurized via the ductile ring (29) and, therefore, cannot allow the fluid to enter behind the O-ring.

Overbeke has nothing to do with sealing rings and springs or flow of the fluid as uniquely claimed.

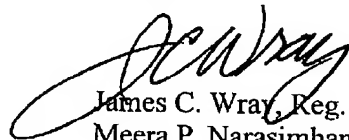
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The objective evidence in the present application dictates a finding of non-obviousness as required under 35 U.S.C. 103(a).

CONCLUSION

Entry of the amendment and reconsideration and allowance of all claims are respectfully requested.

Respectfully,



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